

Bedford-Manchester 40731



Bridge Preservation of I-293 and NH 101 bridges over Merrimack River

June 5, 2018

Introductions

- Joseph Adams, PE
 - NHDOT Bureau of Bridge Design
 - Consultant Design Chief
- Jason Tremblay, PE
 - NHDOT Bureau of Bridge Design
 - Senior Project Engineer
- Joseph Johnson, PE, PTOE
 - Greenman-Pedersen, Inc.
 - Project Consultant

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Project Purpose

- Bridge Maintenance and Preservation
 - Extends the useful life of the bridges
 - Remove EB bridge from State's Red List
 - Piers are in poor condition



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Project Need

- Leaking Expansion Joints



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Project Need

- Deteriorated Bridge Piers



Bridge Preservation of I-293 and NH 101 bridges over Merrimack River

Project Need

- Cracked Pavement and Joints



Bridge Preservation of I-293 and NH 101 bridges over Merrimack River

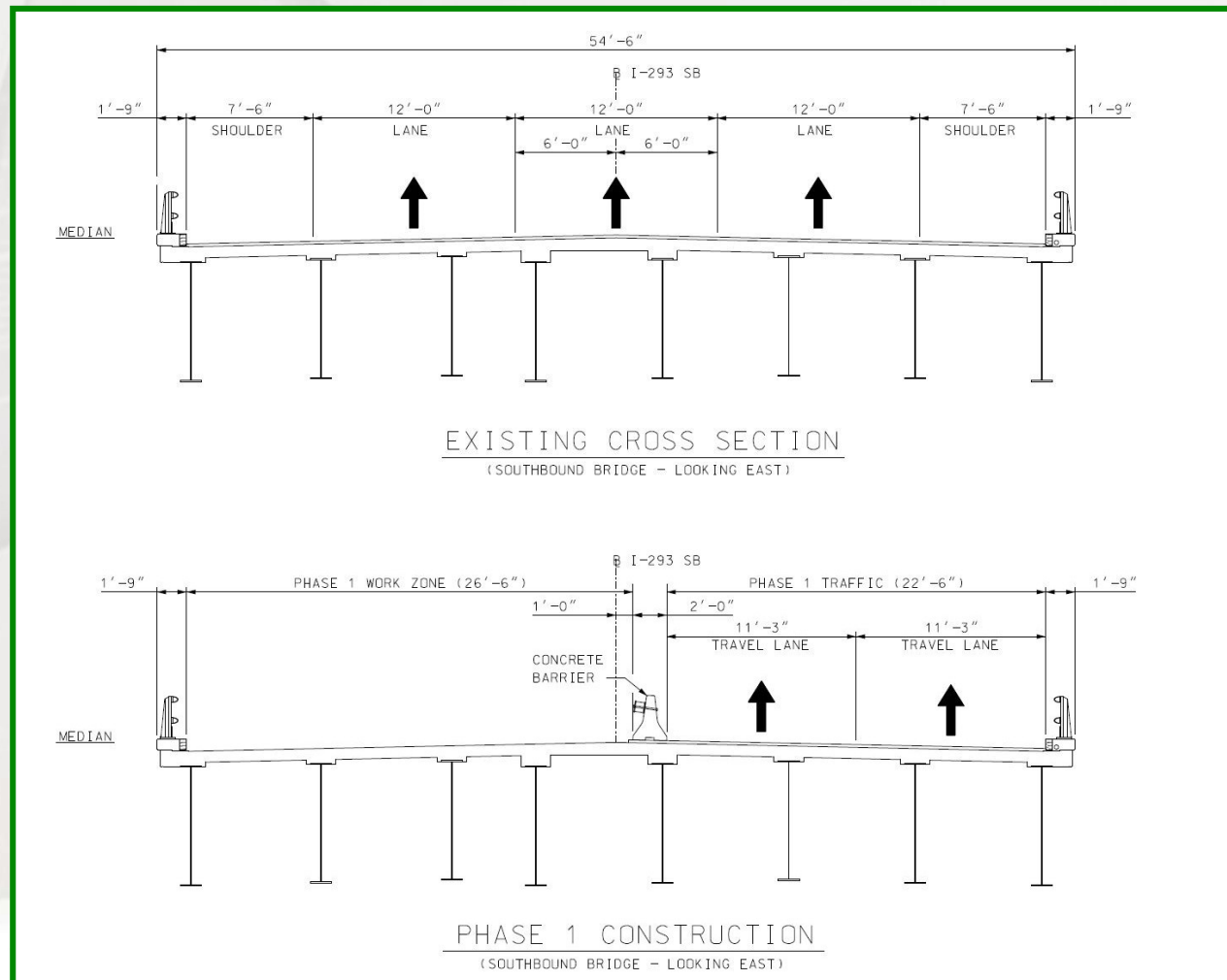
Project Scope

- Replace bridge expansion joints
- Repair bridge piers
- Replace pavement and membrane
- Patch deck

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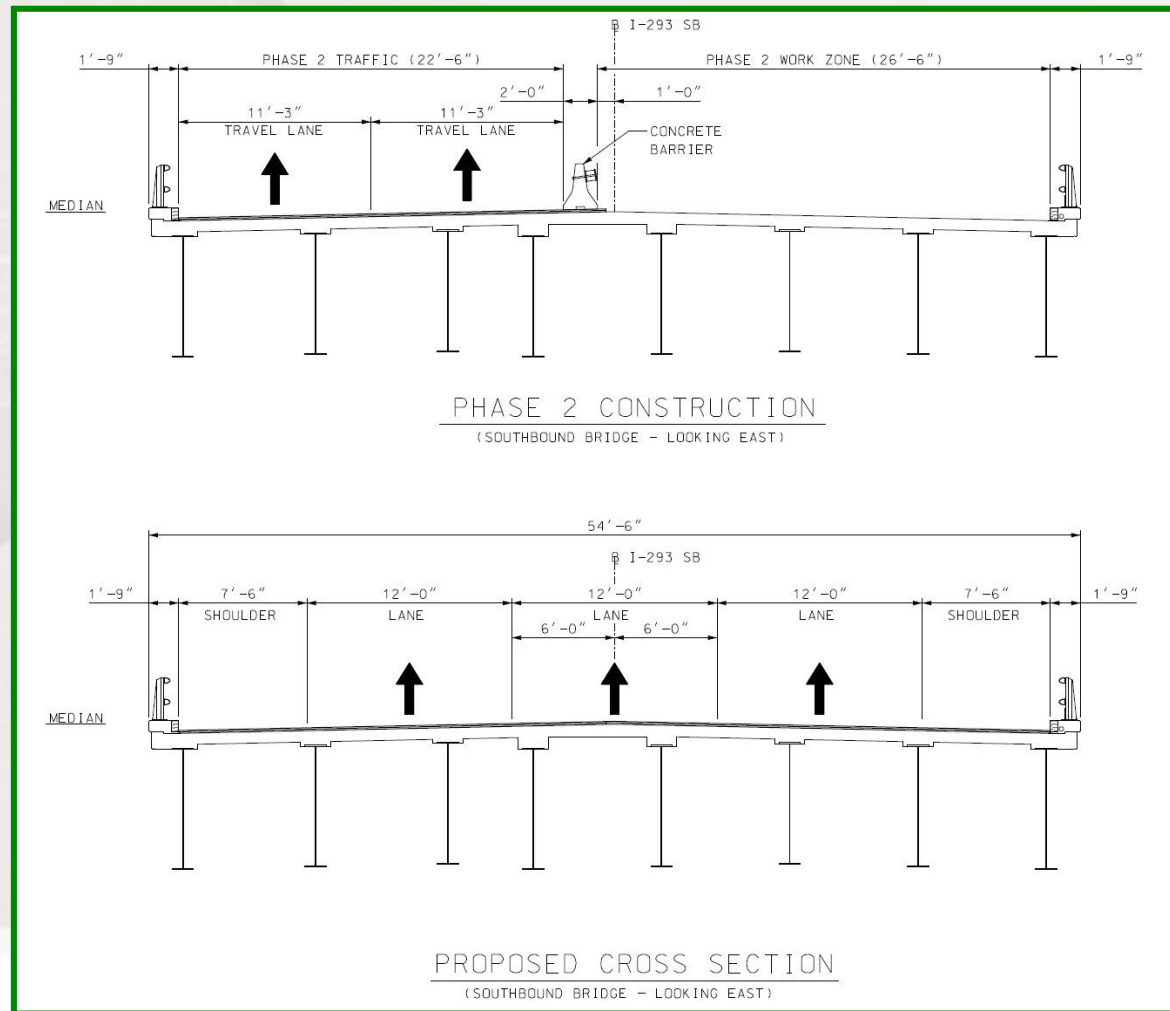
Bridge Cross Section



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Bridge Cross Section



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Typical Work Zone



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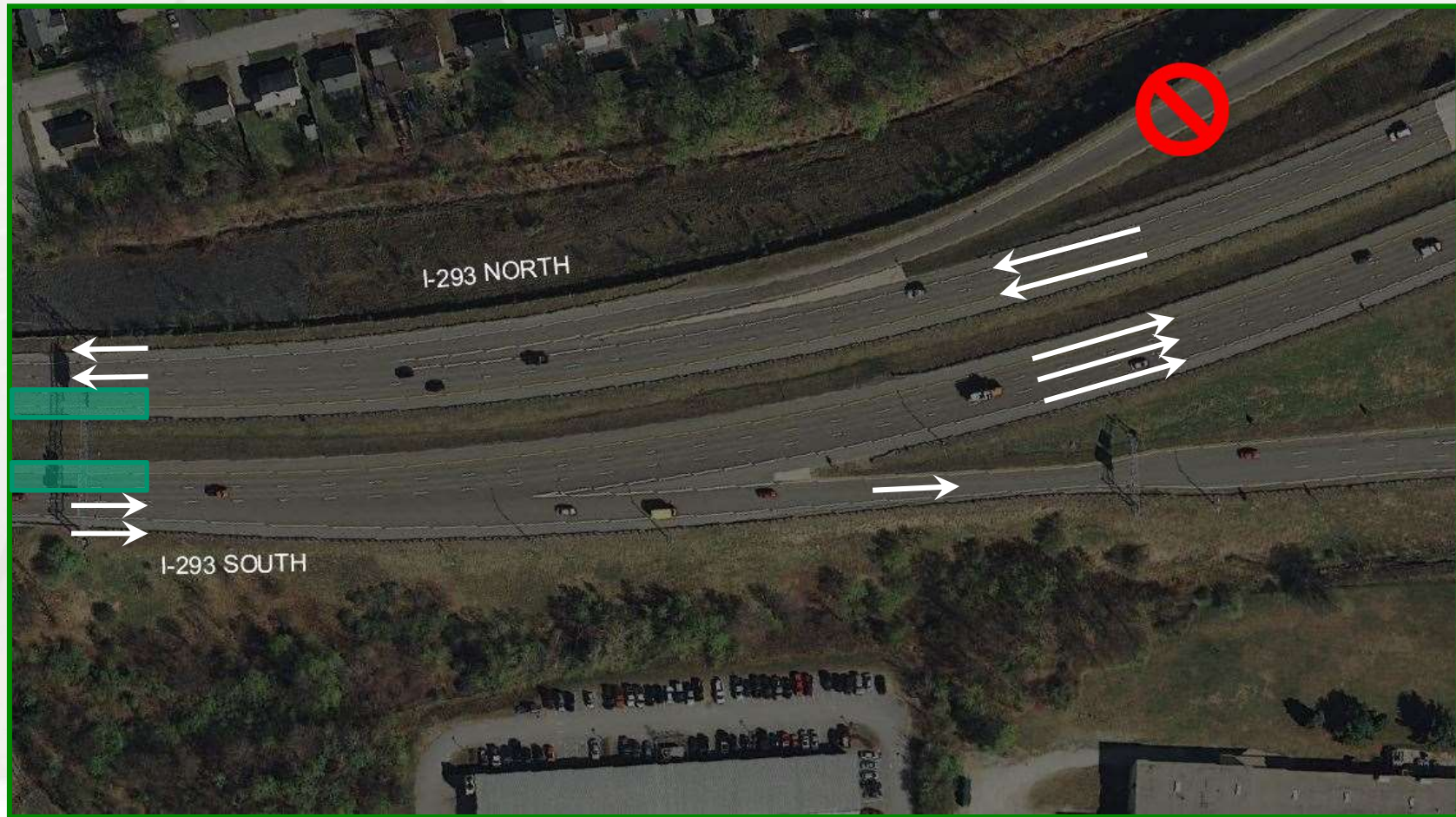
West Side Ramps



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Brown Avenue Ramps



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Options Considered:

- Reduce I-293 NB to 1 Lane
- Realign On-Ramp during Construction
- Four Phase Construction
- Anticipated Queue Lengths

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Reduce I-293 NB to One Lane



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Reduce I-293 NB to One Lane



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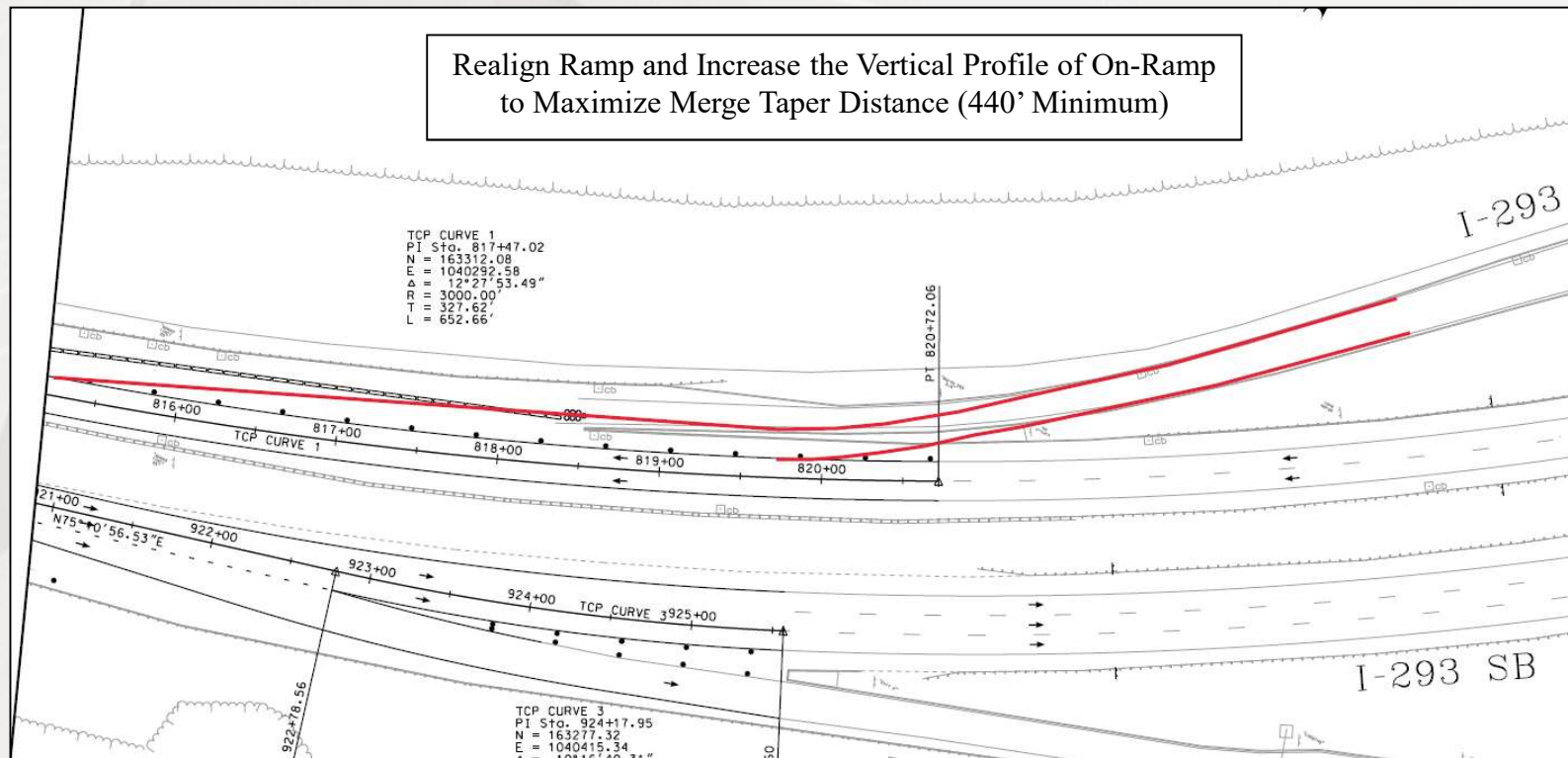
Realign On-Ramp



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Realign On-Ramp



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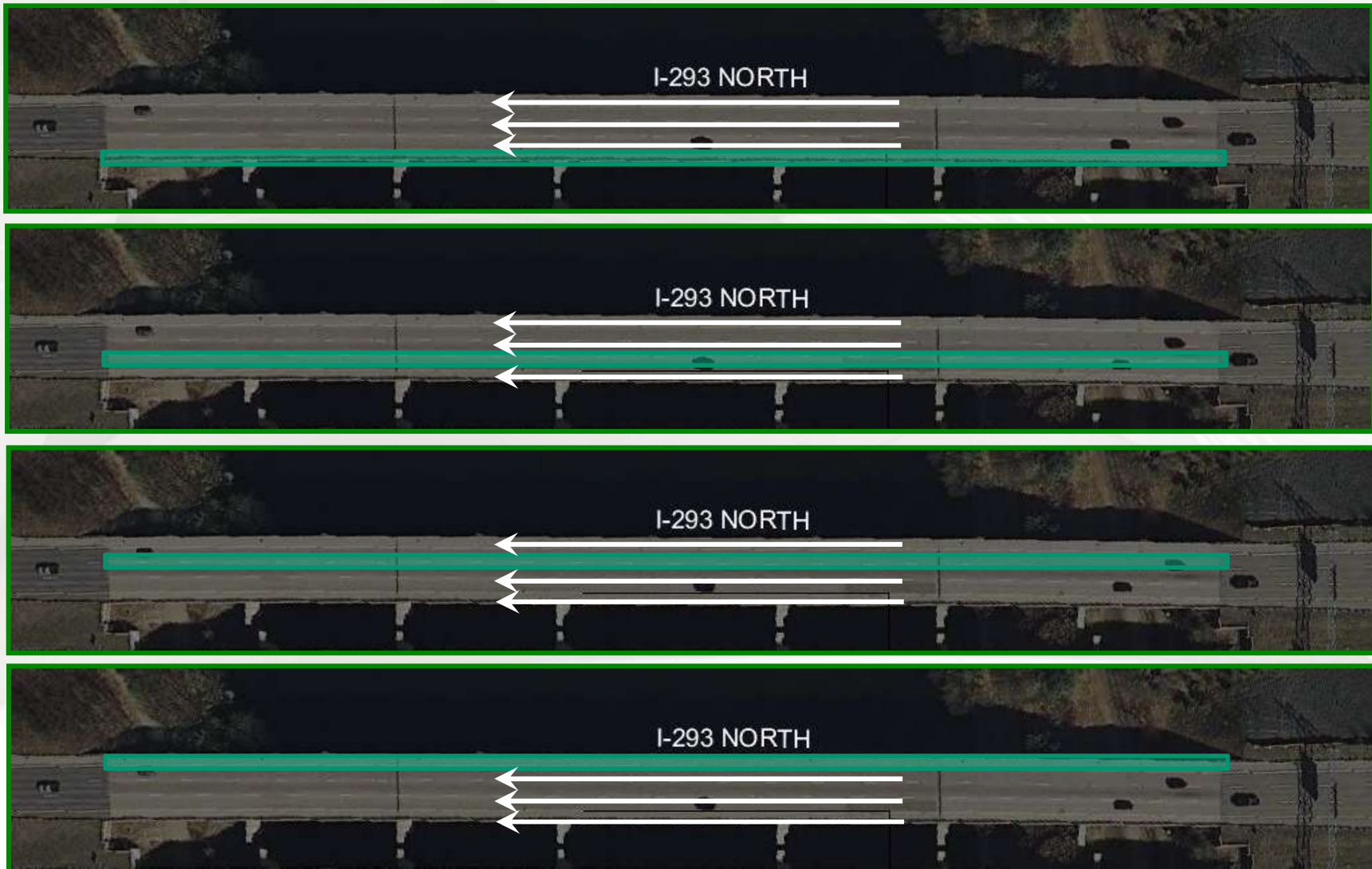
Realign On-Ramp



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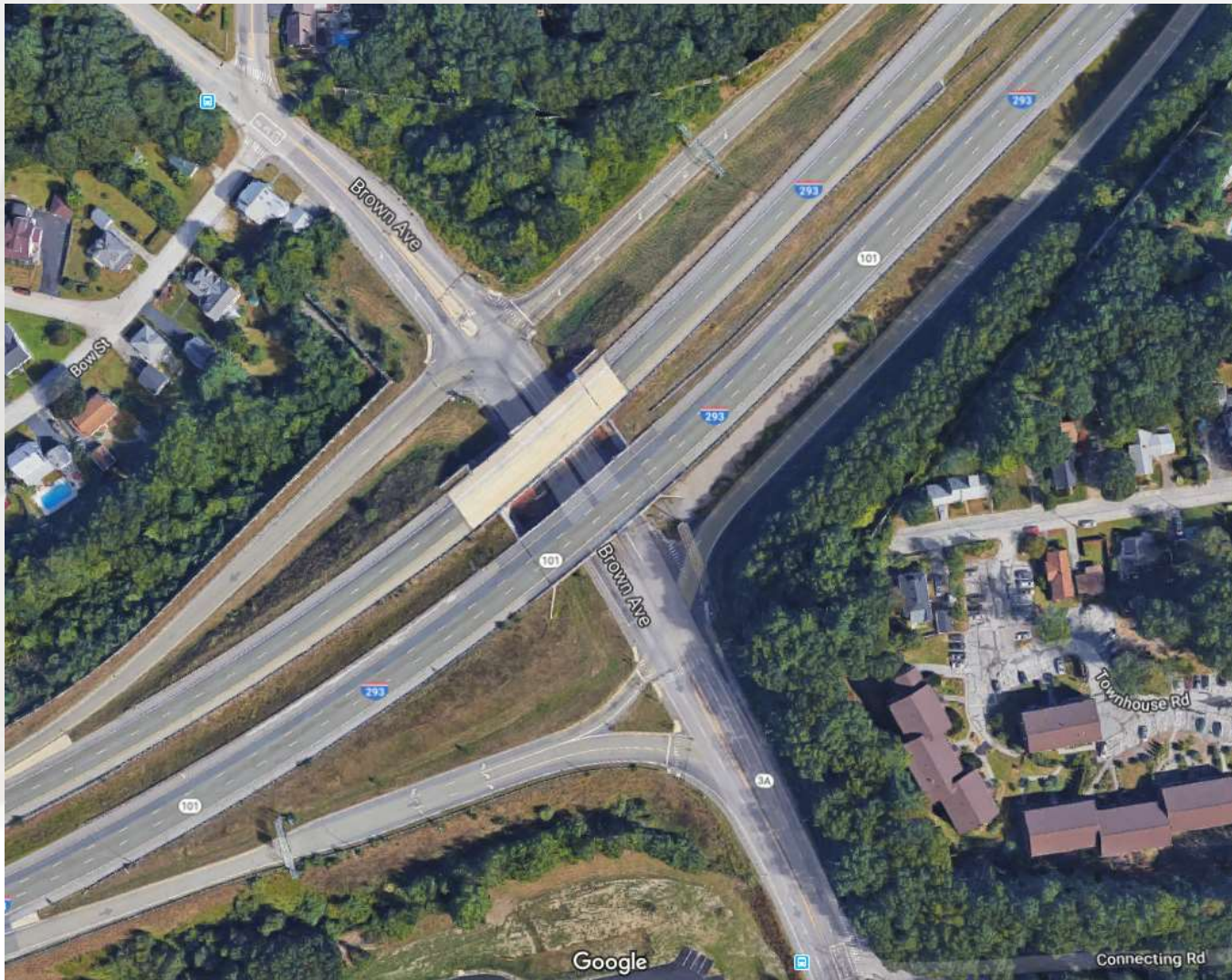
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Four Phase Construction



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Anticipated Queue Lengths



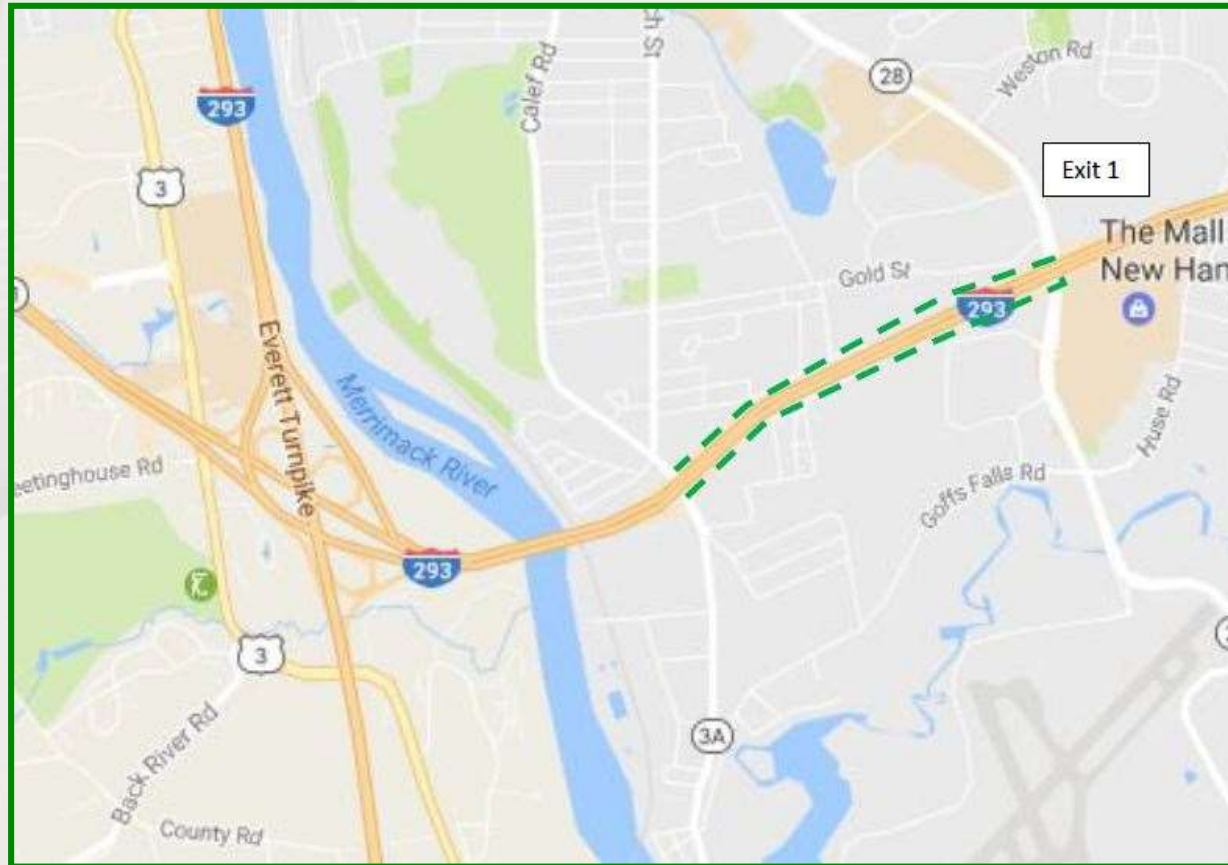
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Anticipated Queue Lengths



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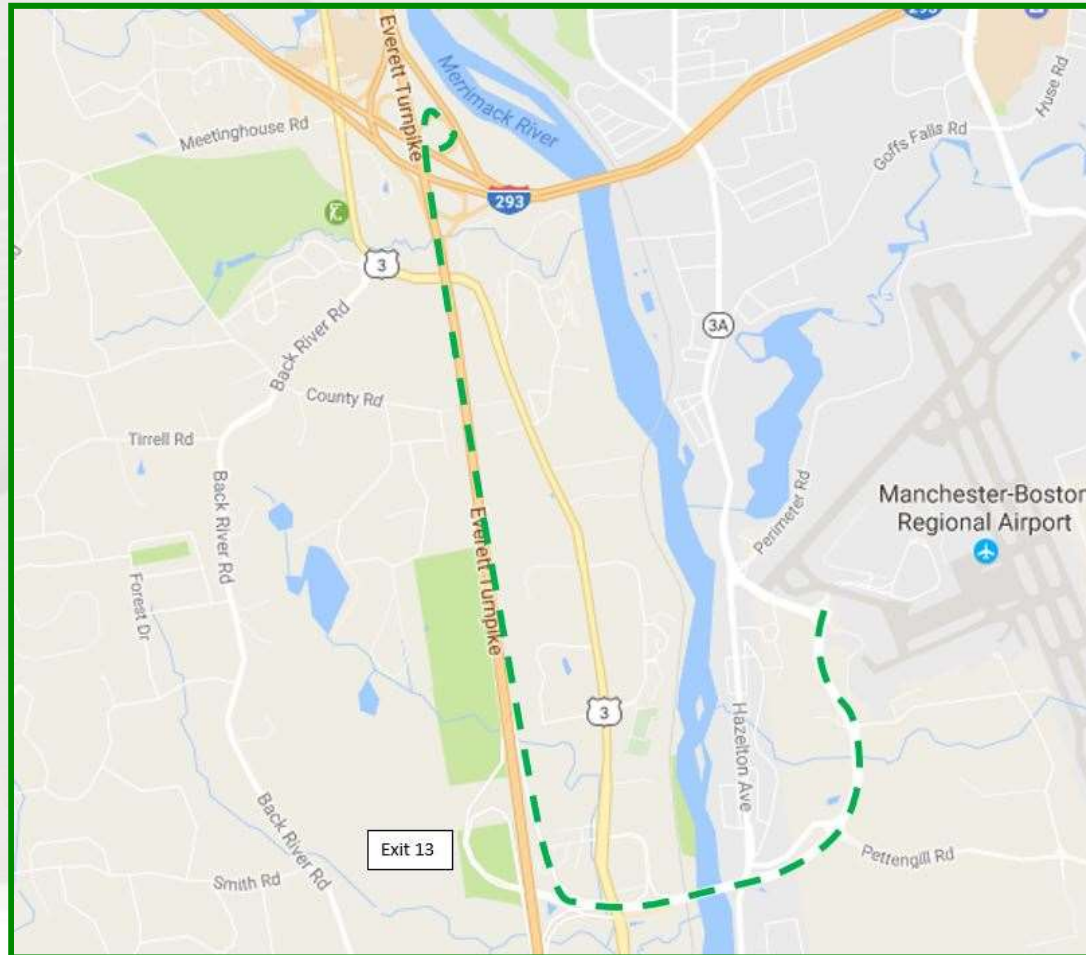
Brown Ave Detour



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Brown Ave Detour



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Traffic Mitigation Efforts

- Smart Work Zone technology
 - Traffic monitoring and delay information
- Advanced signing and message boards
- Local user knowledge
 - Alternative routing
 - Waze, Google Maps, etc.
- Field adjustment of timings at Exit 1 & 2
- Lane Use Changes at Exit 2

Traffic Mitigation Efforts

Current Configuration



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Traffic Mitigation Efforts

Prior to Construction



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Traffic Mitigation Efforts

During Construction



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Traffic Mitigation Efforts

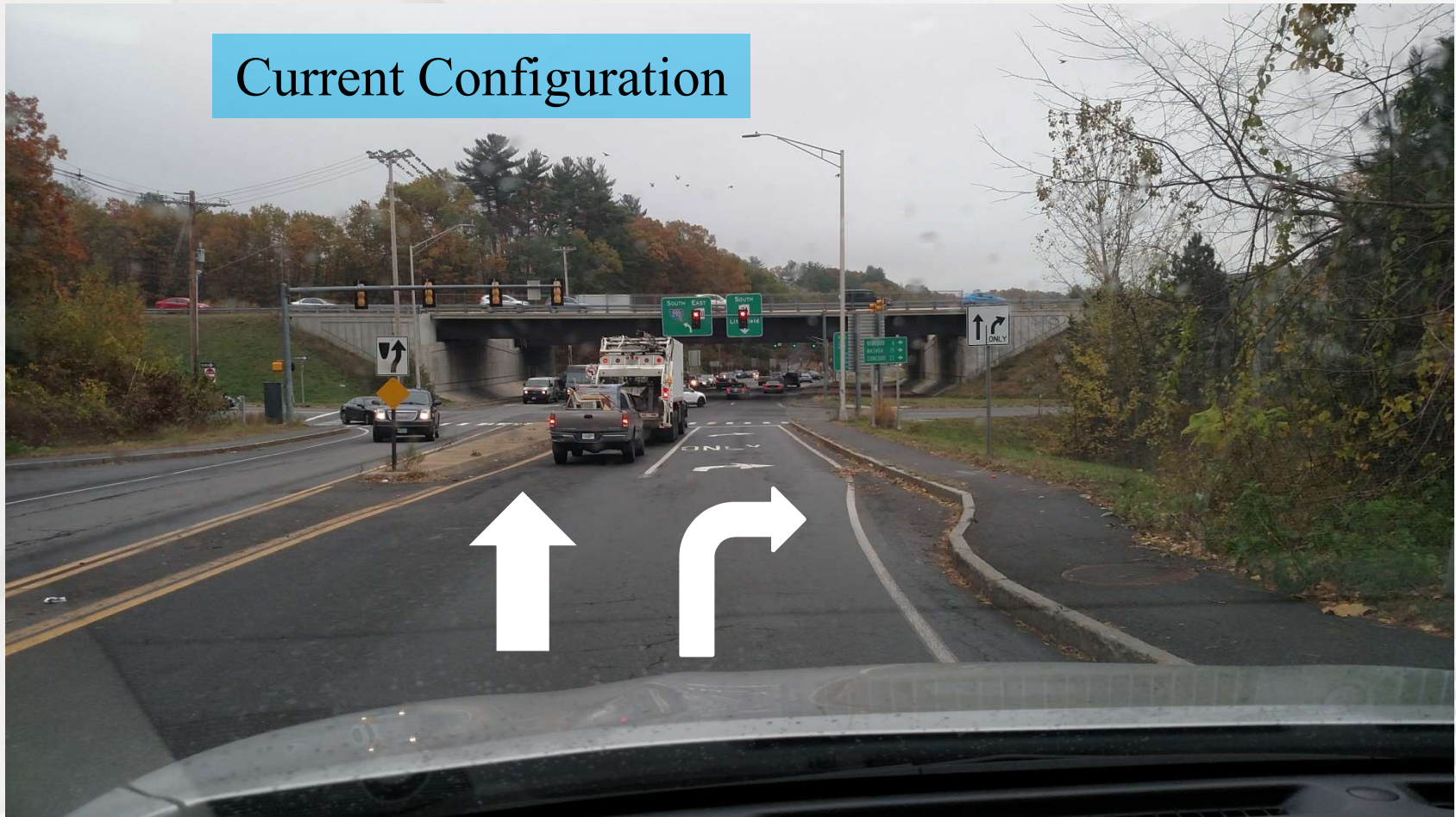
After Construction



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Traffic Mitigation Efforts

Current Configuration



Bridge Preservation of I-293 and NH 101 bridges over Merrimack River

Traffic Mitigation Efforts

During Construction



Bridge Preservation of I-293 and NH 101 bridges over Merrimack River

Traffic Mitigation Efforts

After Construction



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Anticipated Project Schedule

- Advertise for bids – June 2018
- Mid-April 2019 to June 2019
 - Traffic shifted right on both bridges
 - 2 to 2.5 month duration for both bridges
- July 2019 to Mid-September 2019
 - Traffic shifted left on both bridges
 - 2 to 2.5 month duration for both bridges
- Completion – Mid-October 2019
 - Final paving and striping

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An aerial photograph of a large multi-lane bridge spanning a wide river. The bridge has several concrete piers supporting its structure. The surrounding landscape is a mix of bare trees and patches of snow, suggesting a winter or late autumn setting. A semi-transparent white box with the text 'Thank You' in green is centered over the middle of the bridge.

Thank You

Questions?

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